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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/887,088	06/25/2001	Hideo Kawamura	KAWAMURA65	7433

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EXAMINER

PHAM, LEDA T

ART UNIT	PAPER NUMBER
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2834

DATE MAILED: 04/04/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/887,088

Applicant(s)

KAWAMURA, HIDEO

Examiner

Leda T. Pham

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 December 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Response to Amendment

1. This office action is in response to Amendment filed on 12/11/02.
2. Claims 1 – 18 are presented for examination, claims 19 – 21 are canceled.

In view of amendment, the examiner withdraws the objections to the specification and claim rejection USC 35 §112.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 7 – 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Scott et al. (U.S. Patent No. 5,929,611) in view of Nishiyama et al. (U.S. Patent No. 6,340,857 B2).

Referring to claim 1, Scott teaches a generator (figure 2) with plural power-generation characteristics, comprising a rotor shaft (200) supported for rotation in a stator frame (210), a rotor (220) mounted against rotation on the rotor shaft, and a stator (210) arranged around the rotor and fixed to the stator frame, wherein the stator is comprised of an inside cylinder arranged around the rotor to define an air gap between confronting surfaces of them, teeth (not show, but inherently in a stator to have slots for winding) arranged spaced circumferentially on the inside cylinder to form sequential slots, an outside cylinder surrounding around tooth tips of the teeth, at least two systems of stator windings (figure 6), one of which is low power windings each containing a small number of turns (604) while another of which is high power windings each

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containing a large number of turns (602), and terminal lines having terminals connected to any preselected low power and high power windings. However, Scott does not teach the systems of stator windings either concentrated- wound or distributed-wound.

Nishiyama teaches a generator having stator windings in concentrated-wound for producing less eddy-current and can prevent demagnetization.

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the stator winding by concentrated-wound as taught by Nishiyama. Doing so would produce less eddy-current and can prevent demagnetization.

Referring to claim 7, Nishimura teaches the stator windings concentrated-wound around a field pole corresponding to any pole of the rotor are shunt from series connections into parallel connections as an rpm of the rotor increases, thus regulating a generated voltage.

Referring to claim 8, which recite the function of using electric power produced in the low power and high power windings to an automotive electric system and to auxiliaries. This is intended use claim, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963).

Referring to claim 9, Scott teaches the generator wherein the produced power is regulated by on-off operations of switches (figure 6) installed in lines connecting the stator windings with the terminals.

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Referring to claim 10, Scott teaches a generator having a rotor but does not teach the rotor comprises a permanent-magnet member composed of permanent-magnet pieces arranged spaced from each other around the rotor shaft, and resinous adhesives bonding together any adjacent permanent-magnet pieces, and a reinforcing member of non-magnetic property surrounding around the permanent-magnet member, the reinforcing member being coated at the inside surface thereof with adhesives.

Nishiyama teaches in figure 1, a motor having a rotor comprising a permanent-magnet member (12) composed of permanent-magnet pieces arranged spaced from each other around the rotor shaft (16), and resinous adhesives bonding together any adjacent permanent magnet pieces (column 4, lines 35 – 40), and a reinforcing member of non-magnetic property surrounding around the permanent-magnet member, the reinforcing member being coated at the inside surface thereof with adhesives for restraining an eddy current.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Scott's generator with the rotor as taught by Nishiyama to restrain an eddy current.

Referring to claim 11, Nishimura teaches a generator having a permeable member (20, figure 5) disposed between the rotor shaft and the permanent-magnet member.

5. Claims 2 – 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Scott and Nishimura in view of Rosenberry (U. S. Patent No. 4,403,401).

The combination of Scott and Nishimura teaches the claim invention, except for the stator has a cylindrical magnetic path and being prepared separately from the toothed member and fit over the toothed member.

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Rosenberry teaches in figure 1 a stator having a cylindrical magnetic path (4) and being prepared separately from the toothed member and fit over the toothed member (5) to assure a close tolerance fit in stator.

It would have been obvious to one skilled in the art at the time the invention was made to modify the stator having a separated cylindrical magnetic path as taught by Rosenberry for the purpose of assuring a close tolerance fit in stator.

Referring to claim 3, Rosenberry substantially discloses the cylindrical magnetic path is closely press fit over sequential tooth tips of the teeth of the toothed member, together with a cylinder of soft material (resin) superior in magnetic permeability.

Referring to claim 4, Rosenberry substantially discloses a resinous material is poured on the stator then, followed by solidified to hold in place the stator windings laid in the slots between any two adjacent teeth of the toothed member.

Referring to claim 5, Rosenberry substantially discloses the stator windings are led through radially outward slot openings of the slots between the adjacent teeth of the toothed member and wound spanning some slots, while the cylindrical magnetic path fits over the toothed member in which the windings laid in the slots have been held in place with the resinous material.

Referring to claim 6, Rosenberry substantially discloses the resinous material is made of any heats-table material hard to be fused owing to heat emanated from the stator windings.

6. Claims 12 – 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Scott in view of Fei (U.S. Patent No. 6,255,755 B1).

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Referring to claim 12, Scott teaches a generator (figure 2) with diverse power-generation characteristics, comprising a rotor (220) supported for rotation in a stator frame (210) and having mounted with permanent magnets of multiple poles (not show), and a stator (210) arranged around the rotor and fixed to the stator frame, wherein the stator is composed of a stator core having radially outwardly extending teeth (not show, but inherently in a stator to have slots for winding) spaced circumferentially about the stator core to form sequential slots and confronting an outer periphery of the rotor to define an air gap between them, and at least two windings (figure 6) wound spanning across the slots, the windings being each grouped into three winding sets that are divided circumferentially with a slot span on the stator core to be independent of one another (figure 6), the windings belonging to each winding set being wound displaced in slot circumferentially 120 electrical degrees apart to form a three-phase system of windings, and wherein terminals are distributed uniformly over an inside circumference of the stator, and a controller unit changes over connections of the terminals every winding sets, thus giving any electric power varied in voltage (figure 6). However, Scott does not teach the windings in a 2nd winding set are arranged in the stator slots so as to overlap with a 1st winding set in waveform of emf, while a 3rd winding set overlaps with the 1st set and the 2nd set in waveform of emf.

Fei teaches a generator having stator windings with the windings in a 2nd winding set are arranged in the stator slots so as to overlap with a 1st winding set in waveform of emf, while a 3rd winding set overlaps with the 1st set and the 2nd set in waveform of emf (figure 2) for operating the speed in the motor.

Thus, it would have been obvious to one skilled in the art at the time the invention was made to modify Scott's generator with the stator windings as taught by Fei for the purpose of operating the speed in the motor.

Referring to claim 13, Fei teaches the winding (22, 24, 26) are grouped into any of three and four winding sets, which are laid in the slots displaced circumferentially of the inside cylinder (figure 2).

Referring to claim 14, Scott teaches a-c power produced in the windings in the winding sets is rectified at a rectifier circuit, and the resultant rectified power is adjusted by a chopper circuit to a preselected voltage.

Referring to claim 15, Scott teaches the winding sets are each constructed in mutually independent electric power source where the produced power may be used either remained a-c form or converted to d-c form.

Referring to claim 16, which recite the function of using electric power produced in the low power and high power windings to an automotive electric system and to auxiliaries. This is intended use claim, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963).

Referring to claim 17, Scott substantially teaches a generator having the windings but does not teach the function of the windings.

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Fei teaches the windings (figure 1, 22, 24, and 26) for high tension are divided into three winding sets, the terminals of the windings are selectively connected in series or parallel by the controller unit (34, 36), and the windings for low tension are concentrated-wound to produce the low tension needed to operate the automotive electric system.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Scott's generator with the winding connected to a controller unit as taught by Fei to control the power in the generator.

Referring to claim 18, Fei substantially discloses the controller unit (34, 36) connects all the concentrated-wound winding sets in series to ensure the maximum high tension, connects any of the concentrated wound windings in series to ensure any tension less than the maximum high tension and further connects all the concentrated-wound windings in parallel to produce the minimum tension.

Response to Arguments

7. Applicant's arguments, filed 12/11/02, with respect to the rejection(s) of claim(s) 1-18 under Nishimura (U.S. Patent No. 6,407,476 B1) have been fully considered and are persuasive. Therefore, the previous rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Scott.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leda T. Pham whose telephone number is (703) 305-4864. The examiner can normally be reached on M-F (7:30-5:00) first Friday Off.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on (703) 308-1371. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 746-9176 for regular communications and (703) 305-1341 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-3431.

Leda T. Pham
Examiner
Art Unit 2834

LTP
March 24, 2003

Thomas M. O'Leary
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